INCH-POUND

MIL-PRF-15733/41H
26 April 2004
SUPERSEDING
MIL-PRF-15733/41G
22 October 1987

PERFORMANCE SPECIFICATION SHEET

FILTERS, RADIO FREQUENCY INTERFERENCE,
STYLE FL84

This specification sheet is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-15733.

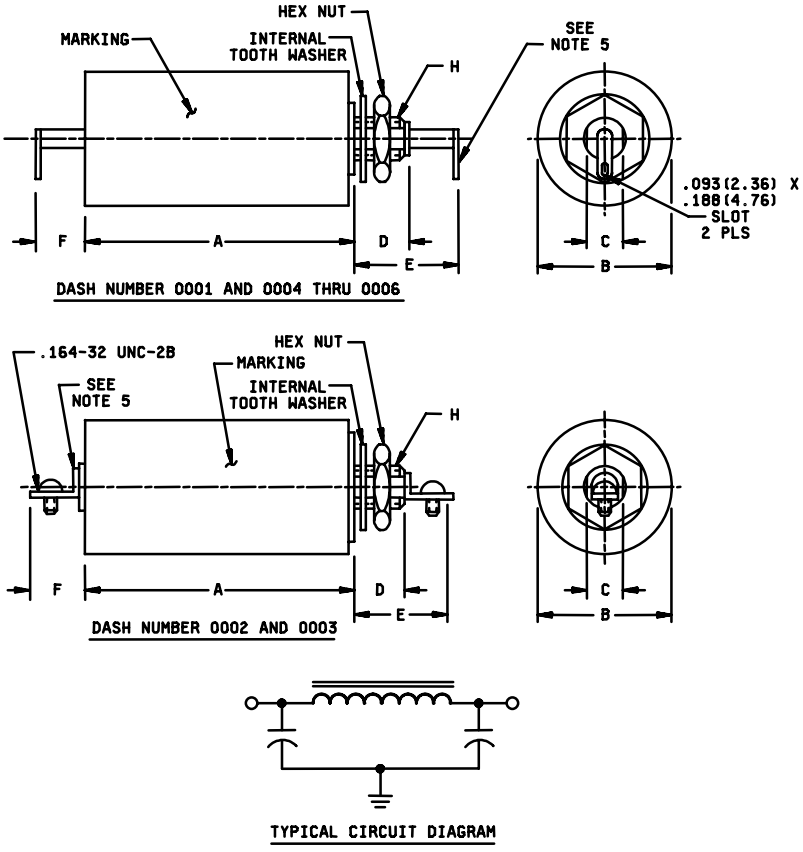
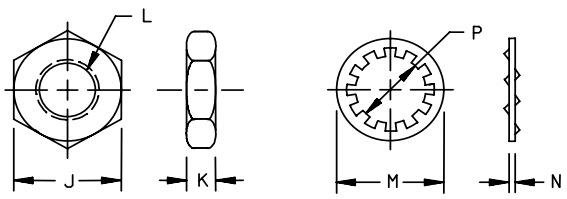


FIGURE 1. Case and circuit configuration.

Filter dimensions.

Dash no.	A		B		C		D		E		F	H	Max
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Max	Mounting thread	Weight (lbs)
0001	2.469 (62.71)	2.655 (67.44)	1.063 (27.00)	1.187 (30.15)	.370 (9.40)	.380 (9.65)	.422 (10.72)	.454 (11.53)	.625 (15.88)	.781 (19.84)	.250 (6.35)	.4375-20 UNF-2A	.375
0002	---	4.562 (115.87)	1.355 (34.42)	1.395 (35.43)	.651 (16.54)	.661 (16.79)	.360 (9.14)	.390 (9.91)	---	1.046 (26.57)	.781 (19.84)	.750-20 UNF-2A	.7
0003	---	3.937 (100.0)	1.230 (31.24)	1.270 (32.26)	.651 (16.54)	.661 (16.79)	.360 (9.14)	.390 (9.91)	---	1.046 (26.57)	.781 (19.84)	.750-20 UNF-2A	.5
0004	2.845 (72.26)	3.031 (76.99)	1.188 (30.18)	1.312 (33.32)	.526 (13.36)	.536 (13.61)	.359 (9.12)	.391 (9.93)	.531 (13.49)	.843 (21.41)	.406 (10.31)	.625-24 UNEF-2A	.59
0005	1.88 (47.75)	3.12 (79.25)	.968 (24.59)	1.032 (26.21)	.365 (9.27)	.385 (9.78)	.417 (10.59)	.457 (11.61)	.573 (14.55)	.737 (18.72)	.218 (5.54)	.4375-20 UNF-2A	.47
0006	3.313 (84.15)	3.499 (88.87)	1.188 (30.18)	1.312 (33.32)	---	.531 (13.49)	.359 (9.12)	.391 (9.93)	.625 (15.88)	.781 (19.84)	.406 (10.31)	.625-24 UNF-2A	.47

FIGURE 1. Case and circuit configuration - Continued.



MOUNTING HARDWARE

Filter hardware dimensions.

Mounting hardware						
Dash no.	Hex nut			Lockwasher		
	J	K	L	M	N	P
0001	.615 .635	.095 .156	.4375-20 UNF-2B	.744 .789	.033 REF.	.448 .464
0002	1.052 1.072	.141 .171	.750-20 UNF-2B	1.047 1.077	.017 .027	.757 .760
0003	1.052 1.072	.141 .171	.750-20 UNF-2B	1.047 1.077	.017 .027	.757 .760
0004 0006	.865 .885	.146 .166	.625-24 UNF-2B	.867 .883	.017 .027	.640 .659
0005	.615 .635	.095 .156	.4375-20 UNF-2B	.744 .789	.033 REF.	.448 .464

inches	mm	inches	mm	inches	mm
.017	0.43	.448	11.38	.760	19.30
.027	0.69	.464	11.79	.789	20.04
.033	0.84	.615	15.62	.865	21.97
.095	2.41	.625	15.88	.867	22.02
.141	3.58	.635	16.13	.883	22.43
.146	3.71	.640	16.26	.885	22.48
.156	3.96	.659	16.74	1.047	26.59
.166	4.22	.744	18.90	1.052	26.72
.171	4.34	.750	19.05	1.072	27.23
.4375	10.11	.757	19.23	1.077	27.36

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Circuit diagram is for information only.
4. Mounting hardware (internal-tooth lockwasher and hex nut) shall be supplied with filter.
5. Terminal shape and angular orientation optional.

FIGURE 1. Case dimensions and circuit diagrams - Continued.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Weight: See figure 1.

Case: Metal.

Case and mounting hardware finish: In accordance with MIL-PRF-15733. Pure tin is prohibited as an underplate and final finish (see MIL-PRF-15733).

Terminals: In accordance with MIL-PRF-15733. Pure tin is prohibited as an underplate and as a final finish (see MIL-PRF-15733).

Solderable (dash numbers 0001, and 0004 through 0006).

Radial tapped permanent stud (dash numbers 0002 and 0003).

Operating temperature range: -55°C to +125°C.

Rated voltage: See table I.

Rated current: See table I.

Insertion loss (at +25°C): In accordance with MIL-PRF-15733 and table I.

(at -55°C and +125°C): Insertion loss shall be as specified in table I except that a degradation of 2 dB from the value specified in table I shall be allowed up to 10 MHz.

Voltage conditioning (conformance inspection only): 100 percent of each lot of filters shall be subjected to the voltage conditioning test. The test shall be conducted prior to the group A inspection of MIL-PRF-15733, as follows:

Test temperature: 125°C ±3°C.

Test voltage: 120 percent of the rated ac voltage. 140 percent of the rated dc voltage (for -0004). Charging current shall not exceed 50 mA.

Test duration: 100 ±4 hours (dash numbers 0001, 0005, and 0006.
50 +4, -0 hours (dash numbers 0002, 0003, and 0004).

After completion of exposure, and while filters are stabilized at +125°C, the insulation resistance shall be measured. Filters shall then be stabilized at +25°C and insulation resistance shall be measured. A reject shall be defined as a filter whose insulation resistance does not meet the initial requirements when measured at +125°C and at +25°C. If the total rejects from any particular lot exceed 10 percent, the entire lot shall be rejected.

Seal: In accordance with MIL-PRF-15733.

Capacitance to ground (applicable to -0001 only): In accordance with MIL-PRF-15733.

Measured capacitance: Between 0.72 and 1.17 μF.

Temperature rise: In accordance with MIL-PRF-15733. Temperature rise shall be 25°C, maximum.

TABLE I. Electrical characteristics.

Dash no.	Rated voltage		Rated current (amps)	Voltage drop (volts)	Minimum insertion loss (dB) in accordance with MIL-STD-220 at ±25°C 2/ 3/										
	V dc	V ac 1/			.15 MHz	.30 MHz	.50 MHz	.60 MHz	1.0 MHz	10 MHz	20 MHz	40 MHz	100 MHz	500 MHz	1 GHz
0001	400	125	10	.5 V rms	24	46	60	65	79	88	88	90	90	90	70
0002	400	125	20	.16 V rms	55	75	75	75	90	90	90	90	90	90	90
0003	400	125	15	.5 V rms	38	58	70	70	80	80	80	80	80	80	80
0004	125	---	20	1.25 V dc	50	58	82	86	90	90	90	90	90	84	84
0005	400	125	1	.5 V rms	60	75	80	80	80	80	80	80	80	80	80
0006	400	125	10	.22 V dc	44	62	75	80	90	85	85	85	85	85	85

1/ DC to 400 Hz.

2/ Full load insertion loss measurements shall be performed at frequencies between 150 kHz to 20 MHz inclusive; all other measurements shall be performed at no load.

3/ In addition, the following dash numbers shall meet the following no-load insertion loss measurements at the specified frequencies.

Dash no.	.15 MHz	.3 MHz	.5 MHz	.6 MHz	1 MHz	10 MHz	20 MHz
0001	44	60	---	78	90	90	90
0004	58	---	86	---	---	---	---
0006	60	---	88	88	100	---	---

Dielectric withstanding voltage: In accordance with MIL-PRF-15733. The following details and exceptions shall apply:

Test voltage: 800 V dc for dash numbers 0001, 0002, 0003, 0005, and 0006.
250 V dc for dash number 0004

Test voltage shall be applied between either terminal and case. The test voltage shall be applied and discharged through a resistance of at least 1 ohm per volt.

Barometric pressure (reduced): In accordance with MIL-PRF-15733 except the test altitude shall be 80,000 feet (0.83 inch of mercury).

Insulation resistance: In accordance with MIL-PRF-15733. Insulation resistance measured between either terminal and case shall be at least:

Dash nos.	Megohms	
	at +25◦C	at +125◦C
0001	550	5
0002, 0003, 0005, 0006	500	5
0004	300	5

Voltage drop: In accordance with MIL-PRF-15733 and table I.

Transient voltage (not applicable to -0004): Filters shall withstand the transient over voltages specified in MIL-STD-704 for 400 hertz ac systems. The following details shall apply:

Transient application: The output load shall be removed and the input voltage shall be stepped form 115 V rms to 180 volts within 20 milliseconds of removal of the load. The step from 115 to 180 volts shall be accomplished with a rise time of less than 60 milliseconds. The 180 volts shall be maintained for 100 milliseconds minimum. This cycle shall be repeated 10 times.

Measurements at +25◦C after test: Insulation resistance and insertion loss shall be measured and shall meet initial requirements.

Terminal strength: In accordance with MIL-PRF-15733 and method 211, MIL-STD-202, test condition A (pull).

Applied force:

Dash nos.	Pounds
0001	3
0002 and 0003	9
0004 through 0006	5

The force shall be applied in a direction parallel to the longitudinal axis of the filter. Slight deformation at the solder tab shall be allowable provided no cracks, fractures or other damage to the terminal results from this test.

Flashpoint of impregnant or potting compound: In accordance with MIL-PRF-15733. Minimum allowable flashpoint shall be 145◦C.

Salt atmosphere (corrosion): In accordance with MIL-PRF-15733 and Method 101, MIL-STD-202; test condition A.

Shock (specified pulse): In accordance with MIL-PRF-15733 and method 213, MIL-STD-202; test condition I. The following details and exceptions shall apply:

Mounting: Filters shall be rigidly mounted by the body.

Insertion-loss: Not applicable.

Vibration, high frequency: In accordance with MIL-PRF-15733 and method 204, MIL-STD-202; test condition D for -0001 through -0005 and test condition B for -0006. The following exception shall apply:

Electrical current load shall not be applied to filters during the vibration test.

Life: In accordance with MIL-PRF-15733 and method 108, MIL-STD-202; test condition B.

Test temperature +125°C.

VERIFICATION

Qualification inspection: In accordance with MIL-PRF-15733 except that the transient voltage test shall be included as an additional test Group (see table II).

TABLE II. Qualification inspection. 1/

Inspection	Number of samples to be inspected	Number of defectives allowed
Group VI		
Transient voltage	4	0

1/ This table is in addition to table III of MIL-PRF-15733.

Conformance inspection: In accordance with MIL-PRF-15733 except that prior to Group A inspection, 100 percent of each lot of filters shall be subjected to voltage conditioning as specified herein and the transient voltage test shall be included as an additional subgroup in Group C inspection (see table III).

TABLE III. Group C inspection. 1/

Inspection	Number of samples to be inspected	Number of defectives allowed
Subgroup VI		
Transient voltage	4	0

1/ This table is in addition to table VI of MIL-PRF-15733.

Part or identifying number (PIN): M15733/41- (dash number from table I).

NOTES:

Referenced documents: In addition to MIL-PRF-15733, this specification sheet references the following documents:

MIL-STD-202
MIL-STD-704

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5915-0419)

Review activities:
Army - AT, AV, MI,
Navy - AS, MC, OS
Air Force - 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://www.dodssp.daps.mil/.